

WHAT IS CLAIMED IS:

1. A device for occluding a body lumen or passageway, comprising:

a) a tubular member having a first end, a second end, and a lumen extending therein, which is at least in part expandable within

5 the body lumen from a first configuration to a second larger configuration; and

b) a mesh member transversely disposed on the tubular member, which is permeable to allow for tissue ingrowth to thereby occlude the body lumen.

10 2. The device of claim 1 wherein the mesh member comprises woven strands of a biocompatible material connected to the tubular member.

3. The device of claim 1 wherein the mesh member comprises bundled strands of a biocompatible material connected to the tubular member.

15 4. The device of claim 1 wherein the mesh member is formed from a material selected from the group consisting of nylon, dacron, metal, polymeric material, and animal tissue.

5. The device of claim 1 further including a mesh layer longitudinally disposed along at least a section of at least one of an inner and 20 an outer surface of the tubular member.

6. The device of claim 5 wherein the mesh layer is longitudinally disposed along substantially the entire length of at least one of the inner and the outer surface of the tubular member.

7. The device of claim 1 wherein the mesh member is disposed
5 within the lumen of the tubular member along substantially the entire length of the tubular member.

8. The device of claim 1 wherein the mesh member is disposed within the lumen of the tubular member in a plurality of sections intermittently spaced along the length of the tubular member.

10 9. The device of claim 1 wherein the mesh member is disposed within the lumen of the tubular member at the first end of the tubular member.

15 10. The device of claim 9 including a mesh layer longitudinally disposed along at least a section of at least one of an inner and outer surface of the tubular member.

11. The device of claim 1 wherein the tubular member comprises a material selected from the group consisting of stainless steel, superelastic material, shape memory material, rigid plastics, semirigid plastics, metal, NiTi, tantalum, platinum, and gold.

12. The device of claim 1 wherein the tubular member further includes anchoring members configured to secure the expanded tubular member to a wall defining the body lumen.

13. The device of claim 1 wherein the tubular member expands from 5 the first configuration to the second larger configuration by the release of a radially compressive force.

14. The device of claim 13 wherein the tubular member comprises a superelastic material.

15. The device of claim 9 wherein the tubular member second larger 10 configuration comprises a radially expanded diameter increasing along at least a section thereof from the first end of the tubular member to the second end of the tubular member.

16. The device of claim 1 wherein the tubular member comprises a lattice-like framework.

15 17. The device of claim 16 wherein the lattice-like framework comprises a thin walled metallic tube having a pattern of cuts configured to allow the tubular member to be expanded to the large diameter configuration.

18. The device of claim 16 wherein the lattice-like framework comprises a braid of wire.

19. The device of claim 16 wherein the lattice-like framework comprises a helical coil of wire.

20. The device of claim 1 wherein the surface of the tubular member is configured to promote epithelialization.

5 21 The device of claim 1 coated at least in part with a compound to promote tissue cell growth.

22. The device of claim 1 further comprising a material capable of provoking an inflammatory response.

10 23. The device of claim 22 wherein the inflammatory material comprises copper or copper alloy.

24. The device of claim 22 wherein the inflammatory material comprises a radioactive material.

15 25. The device of claim 1 wherein the tubular member has an open-wall structure to facilitate the ingrowth of tissue cells thereby securing at least a section of the expanded portion of the tubular member to a wall portion of the body lumen.

26. The device of claim 1 further including a plug releasably secured to the mesh member.

27. The device of claim 26 wherein the plug is formed at least in part of a material capable of provoking an inflammatory response.

28. A contraceptive or sterilization device for occluding a reproductive body lumen to prevent the passage of reproductive cells therethrough, comprising:

5 a) a tubular member having a first end, a second end, and a lumen extending therein, which is at least in part expandable within the reproductive body lumen from a first configuration to a second larger configuration; and

10 b) a mesh member connected to the tubular member, which is permeable to allow for tissue ingrowth to thereby occlude the reproductive body lumen.

29. A contraceptive device installed within a lumen of the patient's reproductive system, comprising

15 a) a tubular member having a first end, a second end, and a lumen extending therein, and having at least a portion thereof which is secured to a body wall portion defining at least in part the lumen of the patient's reproductive system; and

20 b) an occluding member connected to the tubular member comprising an epithelialized mesh which occludes the lumen of the patient's reproductive system sufficiently to prevent the passage of reproductive cells therethrough.

30. The installed contraceptive device of the claim 29 wherein the tubular member is epithelialized along at least a length thereof.

31. A contraceptive system, comprising

- a) a catheter having a proximal end, a distal end, and a lumen extending at least in part therein; and
- b) a contraceptive device releasably connected to the catheter, having a tubular member having a first end, a second end, and a lumen extending therein, which is at least in part expandable within the reproductive body lumen from a first configuration to a second larger configuration, and having a mesh member connected to the tubular member, which is permeable to allow for tissue ingrowth to thereby occlude the reproductive body lumen.

10 32. The contraceptive system of claim 31 including an expanding member on a distal section of the catheter to expand at least a portion of the
15 tubular member.

33. A method of contraception comprising the steps of:

- a) inserting within a desired body lumen a contraceptive device comprising a tubular member and a mesh member connected thereto;
- b) expanding the tubular member within the body lumen;

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- c) securing the expanded tubular member to a wall portion defining at least in part the body lumen; and
- d) epithelializing the mesh member to occlude the body lumen.

5 34. The method of claim 33 wherein the step of securing the tubular member to the wall portion comprises epithelializing the tubular member within the body lumen.

10 35. The method of claim 34 wherein the contraceptive device further includes one or more connecting members on a surface of the tubular member, and wherein the step of securing the tubular member to the wall portion further comprises embedding the connecting members in the wall portion.

15 36. The method of claim 33 wherein the contraceptive device is disposed on an expandable member of a delivery catheter, and wherein the step of expanding the tubular member comprises inflating the expandable member.

20 37. The method of claim 36 wherein the mesh member of the contraceptive device is transversely disposed within a lumen of the tubular member at a first end of the tubular member, and a distal end of the expandable member of the catheter is disposed in the tubular member lumen proximal to the mesh member, and the step of inflating the expandable

member expands the tubular member to a larger diameter increasing along at least a section of the tubular member from ^a ~~the second~~ ^{end} to the first end of the tubular member.

38. The method of claim 37 wherein at least the second end of the 5 tubular member is expanded into contact with the wall portion of the body lumen.

39 The method of claim 38 further including the step of deflating the expandable member and withdrawing the delivery catheter from the body lumen.

10 40. The method of claim 33 wherein the step of expanding the tubular member comprises the step of releasing a radially compressive force on the tubular member.

15 41. The method of claim 40 wherein the contraceptive device is disposed within a lumen of a delivery catheter, and the step of releasing the radially compressive force comprises longitudinally displacing the tubular member out a distal end of the delivery catheter.

42. The method of claim 33 wherein the expanded tubular member is disposed within the body lumen for sufficient time for it to be epithelialized within the body lumen and thereby secured to the wall portion.